

U.S.S.N. 09/479,040

Filed: January 07, 2000

MARKED UP VERSION OF AMENDED CLAIMS

Marked Up Version of Amended Claims**Pursuant to 37 C.F.R. § 1.121(c)(1)(ii)**

1. (Twice Amended) An isolated or purified nucleic acid segment comprising a nucleic acid sequence encoding a 3-keto-acyl-CoA reductase protein, wherein the nucleic acid sequence is [selected from the group consisting of:] a nucleic acid sequence at least about 80% identical to SEQ ID NO:8 [which:] that

hybridizes under stringent conditions to SEQ ID NO:8 or the complement thereof;] and [a nucleic acid sequence encoding] encodes a protein at least about 80% identical to SEQ ID NO:9 [which is immunoreactive with an antibody immunoreactive with SEQ ID NO:9;] and that has 3-keto-acyl-CoA reductase activity higher for for D-isomers of C6 carbon chains than for C4 carbon chains.

3. (Amended) A recombinant vector comprising in the 5' to 3' direction:

a) a promoter that directs transcription of a structural nucleic acid sequence encoding a 3-keto-acyl-CoA reductase protein;

b) a structural nucleic acid sequence encoding a 3-keto-acyl-CoA reductase protein; wherein the structural nucleic acid sequence is [selected from the group consisting of:] a nucleic acid sequence at least about 80% identical to SEQ ID NO:8; that [a nucleic acid sequence that] hybridizes under stringent conditions to SEQ ID NO:8 or the complement thereof; and [a nucleic acid sequence encoding] encodes a protein at least about 80% identical to SEQ ID NO:9; and

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a nucleic acid sequence encoding a protein that is immunoreactive with an antibody prepared using SEQ ID NO:9 as an antigen, the antibody being immunoreactive with SEQ ID NO:9; and] and that has 3-keto-acyl-CoA reductase activity higher for for D-isomers of C6 carbon chains than for C4 carbon chains; and

c) a 3' transcription terminator.

4. (Amended) A recombinant cell comprising a nucleic acid segment encoding a 3-keto-acyl-CoA reductase protein, wherein the nucleic acid segment is [selected from the group consisting of:]

a nucleic acid sequence at least about 80% identical to SEQ ID NO:8; that

[a nucleic acid sequence that] hybridizes under stringent conditions to SEQ ID NO:8 or the complement thereof; and

[a nucleic acid sequence encoding] encodes a protein at least about 80% identical to SEQ ID NO:9[; and

a nucleic acid sequence encoding a protein that is immunoreactive with an antibody prepared using SEQ ID NO:9 as an antigen, the antibody being immunoreactive with SEQ ID NO:9] and that has 3-keto-acyl-CoA reductase activity higher for for D-isomers of C6 carbon chains than for C4 carbon chains.

5. (Amended) A genetically transformed plant cell comprising in the 5' to 3' direction:

a) a promoter that directs transcription of a structural nucleic acid sequence encoding a 3-keto-acyl-CoA reductase protein;

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b) a structural nucleic acid sequence encoding a 3-keto-acyl-CoA reductase protein;
wherein the structural nucleic acid sequence is [selected from the group consisting of:]

a nucleic acid sequence at least about 80% identical to SEQ ID NO:8[;] that

[a nucleic acid sequence that] hybridizes under stringent conditions to SEQ ID NO:8 or
the complement thereof, and

[a nucleic acid sequence encoding] encodes a protein at least about 80% identical to SEQ
ID NO:9[; and

a nucleic acid sequence encoding a protein that is immunoreactive with an antibody
prepared using SEQ ID NO:9 as an antigen, the antibody being immunoreactive with SEQ ID
NO:9;]

and that has 3-keto-acyl-CoA reductase activity higher for for D-isomers of C6 carbon
chains than for C4 carbon chains;

c) a 3' transcription terminator; and

d) a 3' polyadenylation signal sequence that directs the addition of polyadenylate
nucleotides to the 3' end of RNA transcribed from the structural nucleic acid sequence.

6. (Amended) A genetically transformed plant comprising in the 5' to 3' direction:

a) a promoter that directs transcription of a structural nucleic acid sequence
encoding a 3-keto-acyl-CoA reductase protein;

b) a structural nucleic acid sequence encoding a 3-keto-acyl-CoA reductase protein;
wherein the structural nucleic acid sequence is [selected from the group consisting of:]

a nucleic acid sequence at least about 80% identical to SEQ ID NO:8[;] that

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[a nucleic acid sequence that] hybridizes under stringent conditions to SEQ ID NO:8 or the complement thereof; and

[a nucleic acid sequence encoding] encodes a protein at least about 80% identical to SEQ ID NO:9; and

a nucleic acid sequence encoding a protein that is immunoreactive with an antibody prepared using SEQ ID NO:9 as an antigen, the antibody being immunoreactive with SEQ ID NO:9;] and that has 3-keto-acyl-CoA reductase activity higher for for D-isomers of C6 carbon chains than for C4 carbon chains;

c) a 3' transcription terminator; and

d) a 3' polyadenylation signal sequence that directs the addition of polyadenylate nucleotides to the 3' end of RNA transcribed from the structural nucleic acid sequence.

9. (Twice Amended) An isolated or purified nucleic acid segment comprising a nucleic acid sequence encoding a polyhydroxyalkanoate synthase protein, wherein the nucleic acid segment is [selected from the group consisting of:]

a nucleic acid sequence at least about 80% identical to SEQ ID NO:10 [which:] that

hybridizes under stringent conditions to SEQ ID NO:10 or the complement thereof; and

[a nucleic acid sequence encoding] encodes a protein at least about 80% identical to SEQ ID NO:11 [which is immunoreactive with an antibody immunoreactive with SEQ ID NO:11;] and that has polyhydroxyalkanoate synthase activity.

11. (Amended) A recombinant vector comprising in the 5' to 3' direction:

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- a) a promoter that directs transcription of a structural nucleic acid sequence encoding a polyhydroxyalkanoate synthase protein;
- b) a structural nucleic acid sequence encoding a polyhydroxyalkanoate synthase protein; wherein the structural nucleic acid sequence is [selected from the group consisting of:]
- a nucleic acid sequence at least about 80% identical to SEQ ID NO:10[;] that [a nucleic acid sequence that] hybridizes under stringent conditions to SEQ ID NO:10 or the complement thereof; and [a nucleic acid sequence encoding] encodes a protein at least about 80% identical to SEQ ID NO:11[; and
- a nucleic acid sequence encoding a protein that is immunoreactive with an antibody prepared using SEQ ID NO:11 as an antigen, the antibody being immunoreactive with SEQ ID NO:11;] and that has polyhydroxyalkanoate synthase activity; and
- c) a 3' transcription terminator.
12. (Amended) A recombinant host cell comprising a nucleic acid segment encoding a polyhydroxyalkanoate synthase protein, wherein the nucleic acid segment is [selected from the group consisting of:]
- a nucleic acid sequence at least about 80% identical to SEQ ID NO:10[;] that [a nucleic acid sequence that] hybridizes under stringent conditions to SEQ ID NO:10 or the complement thereof; and [a nucleic acid sequence encoding] encodes a protein at least about 80% identical to SEQ ID NO:11[; and

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a nucleic acid sequence encoding a protein that is immunoreactive with an antibody prepared using SEQ ID NO:11 as an antigen, the antibody being immunoreactive with SEQ ID NO:11] and that has polyhydroxyalkanoate synthase activity.

13. (Amended) A genetically transformed plant cell comprising in the 5' to 3' direction:

- a) a promoter that directs transcription of a structural nucleic acid sequence encoding a polyhydroxyalkanoate synthase protein;
- b) a structural nucleic acid sequence encoding a polyhydroxyalkanoate synthase protein; wherein the structural nucleic acid sequence is [selected from the group consisting of:]
 - a nucleic acid sequence at least about 80% identical to SEQ ID NO:10[;]that
 - [a nucleic acid sequence that] hybridizes under stringent conditions to SEQ ID NO:10 or the complement thereof; and
 - [a nucleic acid sequence encoding] encodes a protein at least about 80% identical to SEQ ID NO:11[; and

a nucleic acid sequence encoding a protein that is immunoreactive with an antibody prepared using SEQ ID NO:11 as an antigen, the antibody being immunoreactive with SEQ ID NO:11] and that has polyhydroxyalkanoate synthase activity;

- c) a 3' transcription terminator; and
- d) a 3' polyadenylation signal sequence that directs the addition of polyadenylate nucleotides to the 3' end of RNA transcribed from the structural nucleic acid sequence.

14. (Amended) A genetically transformed plant comprising in the 5' to 3' direction:

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- a) a promoter that directs transcription of a structural nucleic acid sequence encoding a polyhydroxyalkanoate synthase protein;
- b) a structural nucleic acid sequence encoding a polyhydroxyalkanoate synthase protein; wherein the structural nucleic acid sequence is [selected from the group consisting of:]
a nucleic acid sequence at least about 80% identical to SEQ ID NO:10[;] that
[a nucleic acid sequence that] hybridizes under stringent conditions to SEQ ID NO:10 or the complement thereof; and
[a nucleic acid sequence encoding] encodes a protein at least about 80% identical to SEQ ID NO:11[; and
a nucleic acid sequence encoding a protein that is immunoreactive with an antibody prepared using SEQ ID NO:11 as an antigen, the antibody being immunoreactive with SEQ ID NO:11]; and that has polyhydroxyalkanoate synthase activity;
- c) a 3' transcription terminator; and
- d) a 3' polyadenylation signal sequence that directs the addition of polyadenylate nucleotides to the 3' end of RNA transcribed from the structural nucleic acid sequence.

Please ~~add~~ new claims 24 and 25.

05 Sub 02 24. The nucleic acid segment, vector, or cell of claims 1, 2, 4, 5, or 6, wherein the nucleic acid sequence is SEQ ID NO:8.

25. The nucleic acid segment, vector or cell of claims 9, 11, 12, 13, or 14 wherein the nucleic acid sequence is SEQ ID NO:10.